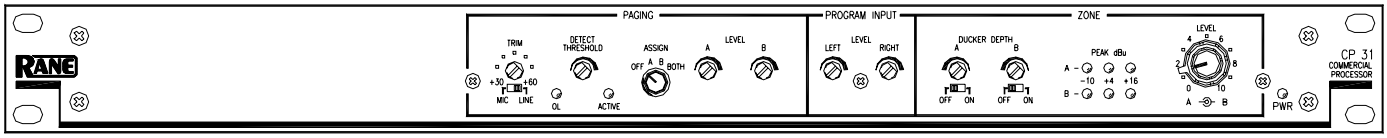


General Description

The CP 31 is a single-page, single-zone stereo or dual-mono commercial preamplifier for the small restaurant, lounge, retail boutique, small office or manufacturing facility. System designers now have three choices in Commercial Processors from Rane to fulfill their paging needs – the CP 31 and its bigger brothers the CP 52 & CP 64.

The CP 31 provides Page Ducking for its single stereo Program Input. One stereo or two completely independent mono Zones are served. The Page signal can be independently assigned to either of the two Outputs.

The Paging Input section includes a balanced Euroblock Input connector, Mic/Line switch, Trim control, ganged/switchable High/Low Cut Filters (fixed at 100 Hz & 7 kHz), gating with adjustable Detect Threshold, Active and Overload LEDs, Page Assign (Off, A, B or Both) and independent Page Levels for the two Outputs, A & B. The Page signal is summed "post-zone level" as shipped from the factory, so Paging levels remain independent of the Zone Output Level. Internal Paging Pre/Post Zone Level switches allow the Paging signal to be summed pre-Zone Level for mic/line mixing.

The Program Input section includes a stereo RCA (unbalanced) Input, Mono switch, and Level trims.

The Zone Output section features adjustable Ducker Depth with an On/Off switch independent for each program input. The Zone Outputs have independent front panel Level controls and 3 segment level meters.

The Expand output allows Page or mono Program signals to feed an additional location or device for system expansion. The Expand Output has its own rear panel Level trim.

The CP 31 is the least complex and least expensive of Rane's Paging products which include the CP 52 and CP 64. The CP 31 is also perfect for zone expansion of Rane CP-based systems. Simply connect the CP 52 or CP 64 Page or Program Expand Outputs to a CP 31 to add an extra Zone (with its own page, program, both or neither).

Gated Paging Circuit Features

- Mic/Line Selection with Gain Trim
- High and Low Cut Filter Switch
- Adjustable Detector Threshold with Active LED
- Independent Paging Level Controls

Zone Output Features

- Level Control
- Ducker On/Off with Depth Control

Special Features

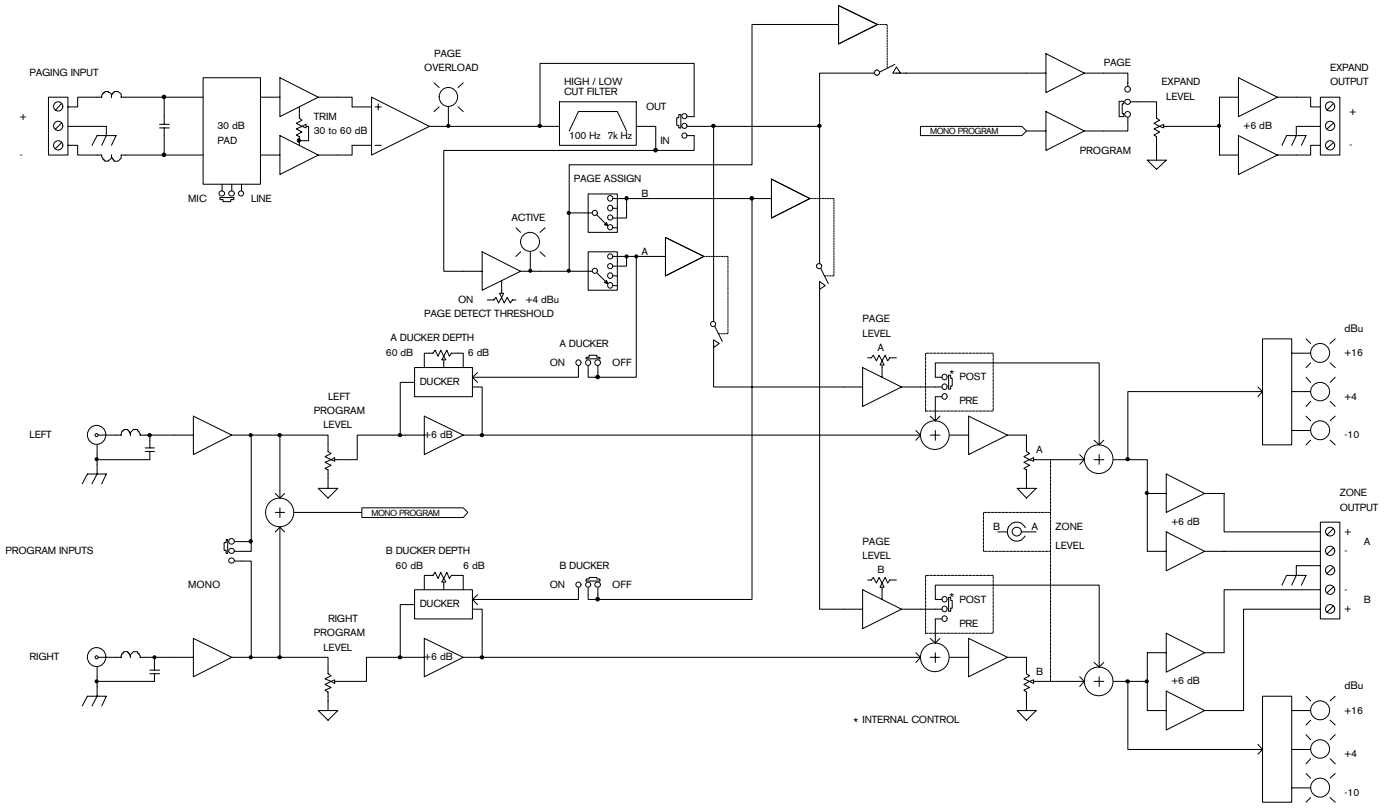
- Page Initiated Program Ducking
- Page/Program Expansion with Level Control
- UL/CSA/CE and 100/120/230 VAC Remote Power Supplies

Features and Specifications

Parameter	Specification	Limit	Units	Conditions/Comments
MIC/LINE PAGING INPUT				
.....Input Type	Balanced			Instrumentation amplifier
.....RFI Filter	Yes			
.....Gain Range	+30 to +60	2	dB	Continuously adjustable
.....Frequency Response	30 to 40k	typ	Hz	Maximum gain, +0, -3 dB
.....Input Referred Noise	-125	1	dBu	Gain: 60 dB, Rs:150 ohms, BW: 20 kHz
.....CMRR	40	min	dB	20 Hz to 20 kHz
.....THD+N	0.05	0.01	%	Gain: 30 dB, +4 dBu out, 1 kHz, BW: 80 kHz
....."Mic" Input Impedance	500	1%	ohms	Each leg to ground
.....Line Pad	30	1	dB	
....."Line" Input Impedance	14.5k	1%	ohms	Each leg to ground
.....Signal Detector Range	-∞ (on) to +4	typ	dBu	Continuously adjustable
.....Signal Detector Attack	10	typ	msec	Fixed; 10 dB overdrive
.....Signal Detector Release	3	typ	sec	Fixed
.....Overload Detector	+16	1	dBu	4 dB before clipping
.....Low Cut / Hi Cut Filters	100 & 7k	5%	Hz	Selectable In/Out
PROGRAM INPUT				Stereo
.....Input Type	Unbalanced			RCA connector
.....Input Level Adjust	Off to 0		dB	
.....Frequency Response	10 to 50k	typ	Hz	+0, -3 dB
.....Input Impedance	10k	1%	ohms	
OUTPUTS				
.....Type	Balanced			Euroblock connector
.....Zone Out Gain: Program In	12	1	dB	
.....From Page Inputs	6	1	dB	
.....Expand Out Gain	6	1	dB	From Page or Program Input
.....Frequency Response	10 to 50k	typ	Hz	+0, -3 dB
.....S/N	90	min	dBr	re +4 dBu; BW: 20 Hz-20 kHz
.....THD+N	0.05	0.01	%	+4 dBu, 1 kHz, BW: 80 kHz
.....Crosstalk	-80	max	dB	1 kHz, Rs: 25 ohms, (L/R)
.....Output Impedance	100	1%	ohms	Each leg
.....Maximum Output	24	typ	dBu	Load: 2k ohms
.....Peak Meter	-10, +4, +16	±2	dBu	Peak reponse
.....Ducker: Depth Range	50 to 6	typ	dB	Continuously adjustable

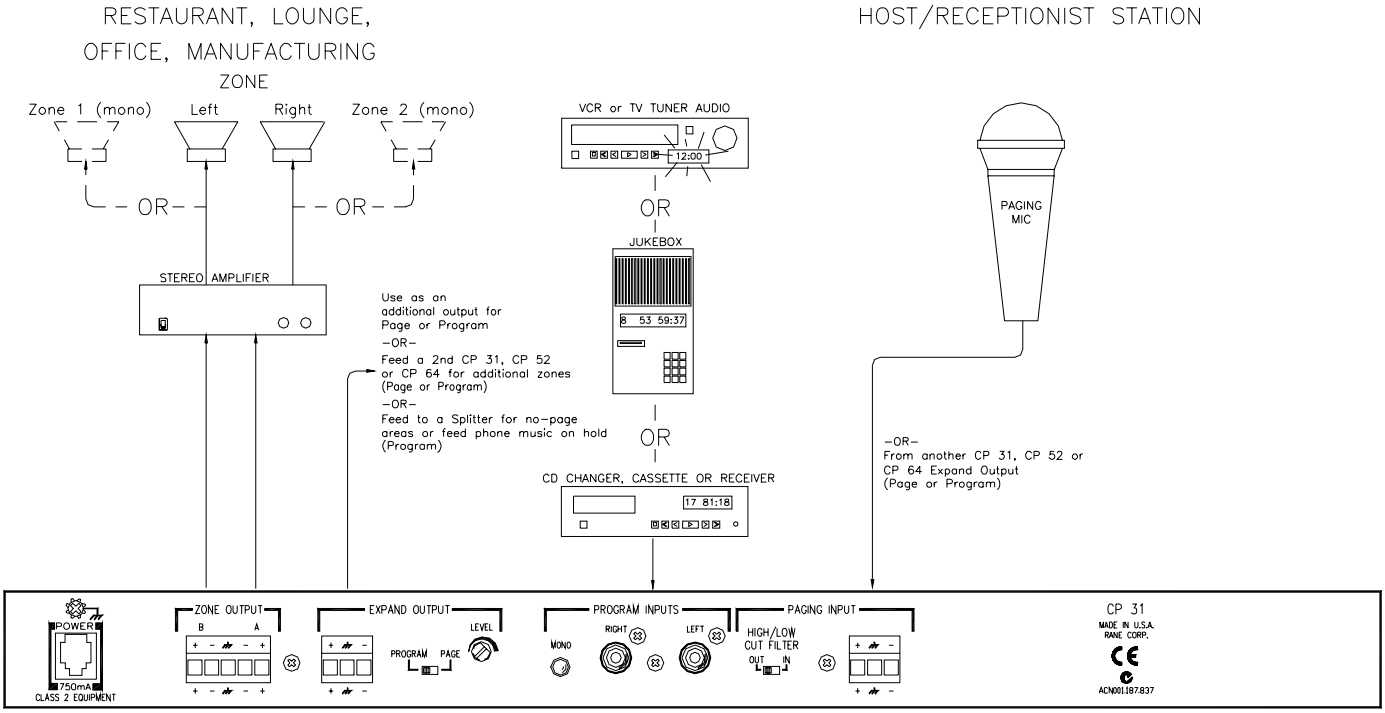
Exposure to modulated RF and electromagnetic fields as specified in CE EMC standard EN55103-2 results in worst case THD+N of 0.34% (quasi-peak, A-weighted, 22-22k Hz) with a signal level of +4 dBu @ 1k Hz.

CP 31 Block Diagram



Parameter	Specification	Limit	Units	Conditions/Comments
UNIT: Agency Listing				
.....120 VAC model	Class 2 Equipment			National Electrical Code
	UL			Exempt Class 2 equipment
	CSA			Exempt Class 2 equipment
.....230 VAC model	CE-EMC			EMC directive 89/336/EEC
	CE-Safety			Exempt per Article 1 of LVD 73/23/EEC
POWER SUPPLY: Agency Listing	RS 1 (see data sheet)			Class 2 Equipment
.....120 VAC model	UL			File No. E88261
	CSA			File No. LR58948
.....230 VAC model	CE-EMC			EMC Directive 89/336/EEC
	CE-Safety			LV Directive 73/23/EEC
Power Supply Requirements	18 VAC w/ center tap	10%	Vrms	
Maximum Current	750		mA	RMS current from remote supply
UNIT: Construction	All Steel			
.....Size	1.75" H x 19" W x 8.5" D			1U (4.4 cm x 48.3 cm x 21.6 cm)
.....Weight	5 lb (w/o power supply)			(2.3 kg)
SHIPPING: Size	4.5" x 20.3" x 13.75"			(11.5 cm x 52 cm x 35 cm)
.....Weight	9 lb			(4.1 kg)
Note: 0 dBu = 0.775 Vrms				

Rear Panel and Example System Diagram



Architectural Specifications

The CP 31 Processor shall provide a gated paging input and two line-level program inputs. One stereo zone with a balanced output shall be served. A port with independent level control shall be provided for mono expansion of page or program signals.

The page input shall use a 3-pin Euroblock connector. Fully adjustable paging controls shall include page Level, 30 dB mic/line input pad plus 30 dB gain trim, detect threshold control, and a high/low cut filter switch.

The program input shall have stereo RCA jacks, independent level controls, and a mono switch.

Zone outputs shall use a 5-pin Euroblock connector. Zone controls shall include a switchable ducker with depth control, independent fpr Zone outputs A and B.

The unit shall be exempt from agency safety requirements and powered from a Rane RS1, UL listed, CSA certified remote power supply (meeting CE-EMC requirements for 230 VAC). The chassis shall be constructed entirely from cold-rolled steel, and mount into a standard EIA relay rack occupying one rack space. Reliability and efficiency are to be primary design considerations.

The unit shall be a Rane Corporation CP 31 Commercial Processor.

Available Accessories

- SC 1.7 Security Cover (full front panel)